

Applicant: F. Shimoshikiryoh
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REMARKS

Applicant appreciates the Examiner's thorough examination of the subject application and requests reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 4-16 are pending in the subject application.

Claims 1-3 were previously canceled.

Claims 5-8, 12, 14 and 15 were withdrawn from consideration as the result of an Examiner's earlier restriction/ election of species requirement. In view of the Examiner's election of species/ restriction requirement, Applicant reserves the right to present the above-identified withdrawn claims in a continuing/ divisional application.

Claims 4, 9-11, 13 and 16 stand rejected under 35 U.S.C. §103. Claim 16 was objected to because of an identified informality.

Claim 4 was amended to include the third phase difference compensator of claim 9 and also to more distinctly describe the third phase difference compensator.

Claim 16 was amended to only address the Examiner's objection.

Claim 9 was amended to reflect changes in the language of the base claim.

The amendments to the claims are supported by the originally filed disclosure including the originally filed claims (*e.g.*, see Fig. 4 and page 42 of the subject application). It also is respectfully submitted that the amendments to the claims do not require further search and consideration and thus, entry of these amendments into the subject application is respectfully requested.

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35 U.S.C. §103 REJECTIONS

Claims 4, 9-11, 13 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over the cited prior art for the reasons provided on pages 2-10 of the above-referenced Office Action. Because claims were amended in the foregoing amendment, the following discussion refers to the language of the amended claim(s). However, only those amended features specifically relied on in the following discussion shall be considered as being made to overcome the prior art reference. The following addresses the specific rejections provided in the above-referenced Office Action.

CLAIMS 4, 10, 11, 13 & 16

Claims 4, 10, 11, 13 and 16 stand rejected as being unpatentable over Tillin et al [USP 6,204,904; "Tillin"] in view of Matsumoto et al. [Electronic Display Devices; "Matsumoto"] and Woo et al. [USP 6,191,836; "Woo"] for the reasons provided on pages 2-7 of the above referenced Office Action. Applicant respectfully traverses.

Applicant claims, claim 4, a liquid crystal display device that includes a first substrate and a second substrate at least one of which is transparent; a liquid crystal layer interposed between the first and second substrates, the layer being made of a nematic liquid crystal material having a positive dielectric anisotropy; a first electrode and a second electrode provided on the first and second substrates, respectively, for applying an electric field substantially vertical to the first and second substrates across the liquid crystal layer; and a first polarizing plate and a second

polarizing plate each provided on an outer side of respective one of the first and second substrates, the first and second polarizing plates being arranged in a crossed Nicols arrangement.

Such a liquid crystal display device also includes first, second and third phase difference compensators. The first phase difference compensator is provided between the first polarizing plate and the first substrate and the second phase difference compensator is provided between the second polarizing plate and the second substrate. The phase-delay axes of the first and second phase difference compensators are parallel to each other and perpendicular to a phase-delay axis of the liquid crystal layer.

The third phase difference compensator has a biaxial refractive index anisotropy and is provided between the first phase difference compensator and the first polarizing plate. The third phase difference compensator includes a first phase delay axis that is arranged to be parallel to a direction normal to a surface of the substrate, and a refractive index anisotropy in a plane parallel to the surface of the substrate, the refractive index anisotropy being perpendicular to a polarization axis of one of the first and second polarizations axes.

The liquid crystal layer in each pixel region in the absence of an applied voltage includes at least a first domain and a second domain in which liquid crystal molecules are oriented in different orientations, the phase difference compensators in the absence of an applied voltage are in a condition that the orientation states of the first and second domains are substantially the same with each other, and are adopted to compensate the refractive index anisotropy of the liquid crystal molecules, being substantially oriented in parallel with respect to the surfaces of the first

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and second substrates and to cause the liquid crystal molecules in the presence of an applied voltage to rise in the opposite direction with each other.

It is respectfully submitted that neither of the cited references disclose the use of a third phase difference compensator, such a phase difference compensator being biaxial and having the features of the presently claimed invention. As set forth in claim 4, the third phase difference compensator having the following features:

- a) a first phase delay axis which is arranged to be parallel to the direction normal to the substrate surface, and
- b) a refractive index anisotropy in a plane parallel to the surface of the liquid crystal display device, the refractive index anisotropy being perpendicular to a polarization axis of one of the first or second polarizers.

As described in the subject application (see pg. 42, line 7) feature (a) is advantageous as the arrangement can compensate for the change in transmissivity associated with a change in viewing angle. As also described in the subject application (see pg. 42, line 15), feature (b) is advantageous as the arrangement can compensate for the rotation of the polarization axes of the elliptically polarized light, and further to provide a display with desirable viewing angle characteristics. This is not described in the cited references.

It is respectfully submitted that claims 4, 10, 11, 13 and 16 are patentable over the cited reference(s) for the foregoing reasons.

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CLAIM 9

Claim 9 stands rejected as being unpatentable over Tillin et al [USP 6,204,904; "Tillin"] in view of Matsumoto et al. [Electronic Display Devices; "Marsumoto"] and Woo et al. [USP 6,191,836; "Woo"] Claim 9 stands rejected as being unpatentable over Takiguchi et al [USP 6,351,299; "Takiguchi"] and Woo et al. [USP 6,191,836; "Woo"] as applied to the claims above, and in the view of Sharp [USP 5,751,384] for the reasons provided on pages 7-10 of the above referenced Office Action. Applicant respectfully traverses.

Claim 9 depends from claim 4. As such, it is respectfully submitted that claim 9 is considered to be in allowable form at least because of its dependency from a base claim that is considered to be allowable. Applicant, however, makes the following further observations regarding this ground for rejection

Sharp describes the use of a neutral linear polarizer in combination with a stack of retarders, in order to provide a complementary color polarizer using a single neutral polarizing film. It is asserted in the Office Action as to the rejection of claim 9, that it would be obvious to combine the use of up to six phase difference compensators with the device disclosed by Tillin, in order to achieve better phase compensation.

Sharp, however, does not describe, teach nor suggest, either of features (a) or (b) discussed above in connection with the other §103 rejection, or the use of a biaxial phase difference compensator specifically. Sharp is not concerned with achieving the effects and advantages outlined above, as Sharp is teaching a method for designing structures for the isolation of an additive primary color from its complementary subtractive primary color.

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It is respectfully submitted that claim 9 is patentable over the cited reference(s) for the foregoing reasons.

The following additional remarks shall apply to each of the above.

As provided in MPEP 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F. 2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As provided above, the references cited, alone or in combination, include no such teaching, suggestion or motivation.

Furthermore, and as provided in MPEP 2143.02, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited references, there is no reasonable expectation of success provided in the reference(s).

As the Federal circuit has stated, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art

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suggested the desirability of the modification.” In re Fritch, 972 F.2d 1260,1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. Para-Ordance Mfg. v. SGS Importers Int’l, Inc., 73 F.2d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995).

It is respectfully submitted that for the foregoing reasons, claims 4, 9-11, 13 and 16 are patentable over the cited reference(s) and thus, satisfy the requirements of 35 U.S.C. §103. As such, these claims, including the claims dependent therefrom are allowable.

CLAIM 16

In the above-referenced Office Action, claim 16 was objected to because of an identified informality. As indicated above, claim 16 was amended so as to address the identified informality.

Accordingly, claim 16 is considered to be in allowable form.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Applicant believes that additional fees are not required for consideration of the within

Response. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed

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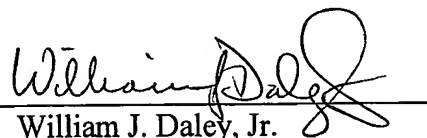
for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit

Account No. **04-1105**.

Respectfully submitted,
Edwards & Angell, LLP

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By:



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